

REMARKS

Claims 1-12 are pending in the application. By the present amendment, claims 1-12 have been amended for clarity. Favorable reconsideration of the application in view of the following remarks is respectfully requested.

In the Advisory Action dated September 24, 2003, the Examiner states that "Invalid IP address and invalid protocol address is clearly not the same." While applicants strenuously disagree with this characterization, in an effort to expedite prosecution of the application, and without acquiescing in the rejections and the Examiner's characterizations, claims 1-12 have been amended to recite that the protocol address is an internet protocol address. Support for these amendments is replete throughout the specification (see, e.g., page 1, lines 8-25). Thus, in view of the Examiner's indication in the Advisory Action that such clarification likely distinguishes the claimed invention over the prior art, applicants respectfully request favorable reconsideration of the application and prompt allowance of the claims.

The rejection of claims 1-12 under 35 U.S.C. §103(a) over Kamalanathan (U.S. Patent No. 6,052,722) in view of Ford et al. (U.S. Patent No. 6,101,499, hereinafter "Ford"), is respectfully traversed. It is noted that Kamalanathan is incorrectly recited in the Office Action as U.S. Patent No. 5,978,373. As set forth above, Kamalanathan is U.S. Patent No. 6,052,727. U.S. Patent No. 5,978,373 is a patent to Hoff et al. which was cited in the previous Office Action. Accordingly, the rejection will be discussed with respect to the combination of Kamalanathan and Ford.

An exemplary description of the operation of exemplary embodiments set forth in the instant application is provided for background and as an aid to the understanding of the invention. In particular, the exemplary embodiments of the claimed invention are, in essence, directed to a process, organized by a proxy separate from some "new" device connected to a network. The proxy interrogates, typically by means of a broadcast frame referred to in the application as "are you there?" The "new" device then responds with a frame that has an *invalid* internet protocol address. It is important to note that the IP address must be one that is "invalid." There is a fundamental difference between an address that is inherently invalid and one that is in valid form, but happens to conflict with an existing address in the sense that it is the same as another valid IP address previously assigned to another device. The proxy then obtains the IP address for the new device. This process is not disclosed or suggested by the combination of references proposed in the outstanding Office Action.

Kamalanathan is directed to a method for discovering client systems on a local area network, and in particular to determining whether LAN clients are running a desktop management interface (DMI). According to Kamalanathan, in response to a discovery request, a DMIADMIN running on a LAN administrator broadcasts a discovery packet to the LAN and then awaits responses in the form of reply packets from DMI agents installed on LAN clients running a DMI. Each reply packet is disclosed as indicating the corresponding client's system type, name, and network address (see, e.g., col. 2, lines 43-48). If the client device has no DMI, there is no reply packet (see, e.g., Kamalanathan,

col. 2, line 19). Thus, the existence of the client will not be recognized by the administrator. That is the end of Kamalanathan.

The allegation in the Office Action that Kamalanathan discloses or suggests "receiving at the proxy a response from said device in the form of a second control frame which defines a protocol address for said device" completely mischaracterizes the teachings of Kamalanathan. Specifically, in Kamalanathan, the response is actually the previously allocated *valid* IP address for that device. Claim 1, however, requires that the response is an invalid IP address.

Additionally, the allegation in the Office Action that the reply packet includes the MAC address of the device is entirely without support. In particular, Kamalanathan's packet shown in Figure 2 has a packet-type segment 202A, which designates the packet as a broadcast packet. Segment 202B is a "system type" segment, not a MAC address. Segment 202C is merely a checksum. Segment 202D is merely disclosed as containing "an identification of the packet." This is not a MAC address or otherwise *of the device* (in any event, this segment is in the wrong place for a MAC address). Segment 204A is a "host name," and the disclosure of Kamalanathan is completely unspecific about what that might be. Segment 204B is a "work group name" that is plainly not a MAC address. Segment 204C is the segment that is filled in with only the IP address. Segment 204D is a command data that "contains commands for future updates." Thus it is clear that there is no teaching or suggestion in Kamalanathan of the MAC address of the device in the reply packet.

Ford is directed to a method and computer program for automatically generating an IP address. In summary, Ford teaches generating a proposed IP address by selecting an IP network prefix and using some deterministic hashing function to generate the host identifying portion of the IP addresses. Ford goes on to test the generated IP address merely to determine whether some existing device is using that particular IP address. Thus, Ford tests for conflicting *valid* IP addresses. There is no disclosure or suggestion in Ford of the use of an *invalid* IP address in the context of the claimed invention.

With respect to Ford, the allegations in the Office Action are simply without merit. For example, the Office Action alleges that testing for conflicting addresses is a "clear teaching of determining whether the network address assigned to a device is invalid." This is simply not the case. According to the exemplary teachings of the instant application, the claimed method returns a conventionally or inherently *invalid* IP address, and it is on receipt of such an invalid address that the proxy organizes a search or process to allocate an IP address. A test for conflict between two *valid* IP addresses is manifestly not the same as testing whether an IP address is conventionally *invalid*. In this sense, *Ford cannot test applicants' conventionally invalid IP address with any existing IP address of the network because that invalid IP address cannot be possessed by any device on the network*. Thus, the Office Action makes two fundamental errors. One is to confuse a comparative test (i.e., are two valid IP addresses the same?) with an absolute test (i.e., is the IP address inherently invalid?). Secondly, the Office Action confuses an

action of comparison performed by the device (as in Ford) with the return of a conventionally invalid IP address from the new device to the proxy.

A fundamental point with respect to Ford is that his process is intended to be performed by a client device that is connected to the network. It is not performed by a proxy, and Ford has chosen his algorithm precisely because it has to be performed by the client devices and *not* by a proxy. For example, see Ford, Figure 4, the generation process 90-94 and the conflict testing is performed by the host device and not by or under the control of a separate proxy. The IP address process is, as clearly disclosed by Ford, performed by each new IP host (see, e.g., col. 11, line 5). Each IP host has to go through the deterministic hashing algorithm to generate an IP address, test for conflict with existing addresses on the network, modify the IP address if a conflict is found, and finally adopt an IP address. Such a process requires substantial embedded software, and is precisely the circumstance indicated in the present specification at page 1, lines 30-31. Many devices have limited memory available for embedded software and are therefore not well adapted for direct participation in the programmed allocation of IP addresses. It is this lack of memory capacity for performing such processes as are described in Ford that the present proxy system was devised. Unlike the situation in Ford, the new device does not have to have the embedded software to generate its own IP addresses.

In summary, Kamalanathan is directed to a discovery protocol that requests a device to return its IP address if it has one. Ford describes an algorithm performed by a new device on the network that is repeatable and deterministic to generate, for that

device, IP addresses that the device tests for conflict with existing IP addresses. In complete contrast, the claimed invention requires that the protocol address (however it might be obtained) is sent from the proxy to the device only after the provision of a conventionally invalid protocol address to the proxy by the host device.

Kamalanathan fails to disclose, teach or suggest the claimed feature that the response at the proxy from the device is an invalid IP address. As set forth above, Ford fails to overcome this fundamental and glaring deficiency of Kamalanathan. Therefore, even if, *arguendo*, the combination of Kamalanathan and Ford were proper, the combination nevertheless fails to render the claimed invention obvious. Accordingly, reconsideration and withdrawal of the rejection are respectfully requested.

In view of the foregoing, it is respectfully submitted that the entire application is in condition for allowance. Favorable reconsideration of the application and prompt allowance of the claims are earnestly solicited.

BUSE et al.

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Amendment in RCE dated October 2, 2003

Should the Examiner deem that further issues require resolution prior to allowance, the Examiner is invited to contact the undersigned attorney of record at the telephone number set forth below.

Respectfully submitted,

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